IN THE CLAIMS

Please amend the claims as follows:

1. (Previously presented) A method for generating memory requests to fetch read data from a plurality of locations in a memory, the memory comprising a plurality of memory pages, each of the memory pages having a plurality of words, the method comprising the steps of:

determining the locations of the read data in the memory;

selecting a packetization scheme based on the locations of the read data;

assembling at least one read command for addressing the plurality of locations of the read data; and

fetching the read data from the memory locations and combining it into a plurality of data packets in accordance with the selected packetization scheme, wherein at least one data packet contains data from more than one of the plurality of memory pages.

2. (Original) The method of claim 1 further comprising the step of sending the at least one read command corresponding to the plurality of data packets to the memory.

3. (Original) The method of claim 2 further comprising the step of fetching the read data in response to sending the at least one read command.

4. (Original) The method of claim 1 wherein the read data comprises a reference pixel chunk having a luminance chunk and a chrominance chunk.

5. (Original) The method of claim 4 wherein the step of determining the location of the read data further comprises receiving at least a set of motion vectors pointing to the reference pixel chunk.

6. (Original) The method of claim 5 further comprising the step of determining a first set of components associated with the reference pixel chunk based on the at least a set of motion vectors.

7. (Original) The method of claim 4 wherein the step of selecting a packetization scheme further comprises combining a part of the luminance chunk and a part of the chrominance chunk into one of the plurality of data packets to be sent from the memory when the luminance chunk overlaps more than one of the plurality of memory pages.

8. (Original) The method of claim 4 wherein the step of selecting a packetization scheme further comprises combining a first part of the luminance chunk and a second part of the luminance chunk into one of the plurality of data packets to be sent from the memory when the luminance chunk overlaps more than one of the plurality of memory pages.

9. (Original) The method of claim 4 wherein the step of selecting a packetization scheme further comprises combining a first part of the chrominance chunk and a second part of the chrominance chunk into one of the plurality of data packets to be sent from the memory when the chrominance chunk overlaps more than one of the plurality of memory pages.

10. (Original) The method of claim 4 further comprising the step of placing a virtual memory page boundary across the luminance chunk, the virtual memory page boundary being associated with the packetization scheme.

11. (Original) The method of claim 4 further comprising the step of placing a virtual memory page boundary across the chrominance chunk, the virtual memory page boundary being associated with the packetization scheme.

12. (Original) The method of claim 1 wherein the packetization scheme selected maps a first set of components to a second set of components by a table lookup.

13. (Original) The method of claim 12 wherein the first set of components comprises the read data corresponding to the luminance chunk and the chrominance chunk, and the second set of components comprises the selected ones of the plurality of words.

14. (Original) The method of claim 1 wherein each of the at least one read command includes specifications for combining selected ones of the plurality of words from selected ones of the plurality of memory pages into the plurality of data packets.

15. (Original) The method of claim 1 wherein the plurality of data packets is equal to or less than a predetermined number.

16. (Original) The method of claim 15 wherein the predetermined number is four and the selected ones of the plurality of memory pages is two.

17. (Original) The method of claim 15 wherein the predetermined number is four and the selected ones of the plurality of memory pages is three.

18. (Original) The method of claim 1 wherein the plurality of data packets comprise 16 words.

19. (Previously presented) A method for packing read data into data packets, the read data being stored in a plurality of locations in a memory, the memory comprising a plurality of memory pages, the method comprising the steps of:

receiving at least one read command requesting the read data, the at least one read command comprising specifications for including in the data packets a plurality of selected portions of the read data from the plurality of memory pages;

sending instructions to the memory according to the at least one read command received, the instructions relating to a manner in which the read data requested is to be obtained from the memory;

receiving the read data from the memory in response to the memory receiving the instructions; and

packing the read data received into the data packets according to the specifications of each of the at least one read commands, wherein at least one data packet contains data from more than one of the plurality of memory pages.

20. (Original) The method of claim 19 wherein the read data is a reference pixel chunk comprising a luminance chunk and a chrominance chunk.

21. (Previously presented) A method for reassembling reference pixel data from a plurality of data packets into a luminance chunk and a chrominance chunk, comprising the steps of:

receiving the plurality of data packets, each data packet comprising a portion of a reference pixel chunk including the luminance chunk and the chrominance chunk;

determining a packetization scheme used to packetize the luminance and chrominance chunks into the plurality of data packets based upon the locations in memory of the data; and

unpacking the plurality of data packets into a reassembled luminance chunk and a reassembled chrominance chunk based on the packetization scheme.

22. (Original) The method of claim 21 further comprising the steps of forming prediction blocks by arranging the plurality of data packets unpacked with any information related to motion vectors, and combining blocks with associated macroblocks to form a reconstructed macroblock.

23. (Previously presented) The method of claim 22 further comprising the step of writing the reconstructed macroblock to a memory having a plurality of memory pages;

selecting a packetization scheme based on a location of read data and on fitting the read data into the plurality of data packets; and

assembling at least one read command for fetching the read data from the memory in accordance with the packetization scheme selected, wherein at least one data packet contains data from more than one of the plurality of memory pages.

24. (Previously presented) A computer readable storage medium having embodied thereon a program, the program being executable by a computer processor to perform a method for generating memory requests to fetch read data from a plurality of locations in a memory, the method comprising:

determining the locations of the read data in the memory;

selecting a packetization scheme based on the location of the read data;

assembling at least one read command for addressing the plurality of locations of the read data; and

fetching the read data from the memory locations and combining it into a plurality of data packets in accordance with the selected packetization scheme, wherein at least one data packet contains data from more than one of the plurality of memory pages.

25. (Previously presented) A computer readable storage medium having embodied thereon a program, the program being executable by a computer processor to perform a method for packing read data into data packets, the method ~~steps~~ comprising:

receiving at least one read command requesting the read data, the at least one read command comprising specifications for including in the data packets plurality of selected portions of the read data from a plurality of memory pages;

sending instructions to the memory according to the at least one read command received, the instructions relating to a manner in which the read data requested is to be obtained from the memory;

receiving the read data from the memory in response to a memory receiving the instructions; and

packing the read data received into the data packets according to the specifications of each read command, wherein at least one data packet contains data from more than one of the plurality of memory pages.

26. (Previously presented) A system for generating memory requests to fetch read data from a plurality of locations in a memory, comprising:

means for determining the locations of the read data in the memory;

means for selecting a packetization scheme based on the locations of the read data and;

means for assembling at least one read command for addressing the plurality of locations of the read data; and

means for fetching the read data from the memory locations and combining it into a plurality of data packets in accordance with the selected packetization scheme, wherein at least one data packet contains data from more than one of the plurality of memory pages.

27. (Previously presented) A system for packing read data into data packets, comprising:

means for receiving at least one read command requesting the read data, the read command comprising specifications for including in the data packets selected portions of the read data from a plurality of memory pages;

means for sending instructions to a memory according to the read command received, the instructions relating to a manner in which the read data requested is to be obtained from the memory;

means for receiving the read data from the memory in response to the memory receiving the instructions; and

means for packing the read data received into the data packets according to the specifications of each read command, wherein at least one data packet contains data from a plurality of memory pages.

28. (Previously presented) A system for decoding pictures in a compressed video bit stream, comprising:

a memory having a plurality of memory pages storing reference pixel data;

an address generator coupled to the memory for generating memory commands for fetching the reference pixel data from the memory;

means for packing the fetched reference pixel data into a plurality of data packets according to the specifications of the memory commands;

a reference data assembly module coupled to the address generator for receiving from the memory the plurality of data packets; and

means for unpacking the plurality of data packets and reassembling the fetched reference pixel data into a reassembled video bit stream, wherein at least one data packet contains data from more than one of the plurality of memory pages.

29. (Original) The system of claim 28 wherein the reference pixel data comprises a luminance chunk and a chrominance chunk.

30. (Original) The system of claim 28 wherein the memory commands comprises specifications for combining selected portions of the reference pixel data from a selected one or more of the plurality of memory pages into at least one of the plurality of data packets.

31. (Original) The system of claim 28 wherein the reference data assembly module unpacks the plurality of data packets to transform the reference pixel data into a reassembled luminance chunk and a reassembled chrominance chunk.

32. (Original) The system of claim 28 wherein the reference data assembly module comprises a plurality of data buffers, each data buffer being configured to receive one of the plurality of data packets.

33. (Original) The system of claim 28 wherein the reference data assembly module comprises an additional module for reassembling the reference pixel data based on a set of motion vectors, a table lookup and packetization scheme used to form the plurality of data packets.

34. (Original) The system of claim 28 wherein the reference data assembly module comprises a plurality of data buffers for buffering a reassembled luminance chunk and a reassembled chrominance chunk.

35. (Original) The system of claim 28 further comprising a variable length decoding module configured to extract a set of motion vectors corresponding to a macroblock in the compressed video bit stream.

36. (Original) The system of claim 35 wherein the variable length decoding module sends the extracted set of motion vectors to the address generator.

37. (Original) The system of claim 28 further comprising a memory interface unit coupled to the memory.

38. (Original) The system of claim 37 wherein the memory interface unit further comprises a memory queue for storing the generated memory commands from the address generator.

39. (Original) The system of claim 38 wherein at least one of the plurality of data packets includes the reference pixel data from at least two of the plurality of memory pages based on the generated memory commands in the memory queue.

40. (Original) The system of claim 37 wherein the memory interface unit further comprises a sequencer for forwarding the generated memory commands to the memory to obtain the reference pixel data based on specifications.

41. (Original) The system of claim 37 wherein the memory interface unit further comprises a packet assembly unit for assembling the plurality of data packets of the reference pixel data obtained from the memory.